

## ABSTRACT OF THE DISCLOSURE

Digitized image data are input into a processor where a detection component identifies the areas (objects) of particular interest in the image and, by segmentation, separates those objects from the background. A feature extraction component formulates numerical values relevant to the classification task from the segmented objects. Results of the preceding analysis steps are input into a trained learning machine classifier which produces an output which may consist of an index discriminating between two possible diagnoses, or some other output in the desired output format. In one embodiment, digitized image data are input into a plurality of subsystems, each subsystem having one or more support vector machines. Pre-processing may include the use of known transformations which facilitate extraction of the useful data. Each subsystem analyzes the data relevant to a different feature or characteristic found within the image. Once each subsystem completes its analysis and classification, the output for all subsystems is input into an overall support vector machine analyzer which combines the data to make a diagnosis, decision or other action which utilizes the knowledge obtained from the image.

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